

Particle tracking

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 An abbreviated version of this protocol was published in eLIFE in Feb 2018

MreB filaments align along greatest principal membrane curvature to orient cell wall synthesis

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Detailed protocol

I am not sure what further protocol we can give you, as there is not really much further information we could even provide.

As stated,

1. we tracked the spots using Trackmate in Fiji (with the specified parameters).
2. We used Morphometrics to get the cell outlines.
3. as there is no good analysis tools in Fiji to get real velocity (much less angle), we used custom matlab code, which is downloadable from the bitbucket account. That gave all our outputs, and all code used in our work is in that repo.

Basically, if you want to track particles. Fiji will do it. But that does not give any measures. If you want to analyze their velocity or diffusion, you have to use custom code. There may be commercial programs that do this, but I am not aware of them (save Imaris software, but that is really expensive.)

So, I'm not sure if I can be of any more help here, in regards to the protocol.

But if you can define your problem a bit more I might be able to help advise. (email me at egarner@g.harvard.edu)

How to cite: (Readers should cite both the Bio-protocol preprint and the original research article where this protocol was used)

1. Garner, E. C.(2020). Particle tracking. Bio-protocol Preprint. bio-protocol.org/prep301.
2. Hussain, S., Wivagg, C. N., Szwedziak, P., Wong, F., Schaefer, K., Izoré, T., Renner, L. D., Holmes, M. J., Sun, Y., Bisson-Filho, A. W., Walker, S., Amir, A., Löwe, J. and Garner, E. C.(2018). MreB filaments align along greatest principal membrane curvature to orient cell wall synthesis. eLIFE. DOI: [10.7554/eLife.32471](https://doi.org/10.7554/eLife.32471)

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